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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

TITLE:

System And Method For Rapid
Generation Of Minimum Length
Pilot Training Schedules

Attorney Docket No.:

CA107US

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APR 01 2002

Technology Center 2100

U.S. Filing Date:

Examiner:

January 11, 2002

Not Assigned

Art Unit:

Assignee: CALEB Technologies Corp.

2121

U.S. Patent Application Serial No.: 10/045,522

Inventors: Benjamin Glover Thengvall &
Xiangtong Qi

Assistant Commissioner For Patents
U.S. Patent And Trademark Office
Washington, D.C. 20231

Dear Sir:

INFORMATION DISCLOSURE STATEMENT MEMORANDUM

Pursuant to 37 CFR § 1.97 and 1.98, Form PTO/SB/08A is enclosed for consideration in the examination and prosecution of this case. A copy of each document listed is enclosed.

No representation is made or intended that more relevant information does not exist, that the order of presentation of the enclosed materials represents order of importance or relevance, that any admissions of any kind is made with regard to the enclosed materials, or that any of the enclosed material is properly citable as prior art against this case.

Applicants respectfully submit that their invention is patentable over the enclosed and listed patents and publications, which are summarized as follows:

U.S. Patents

1. U.S. Patent No. 6,076,067 teaches the decomposition of a vehicle origination and destination problem into a linear vehicle assignment model and a nonlinear network flow model. The nonlinear aspects of the targeted market are incorporated into the vehicle assignment model through use of linear approximations to a total revenue function.

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CA107US
Information Disclosure Statement Memorandum
Page 2

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APR 01 2002

Technology Center 2100

2. U.S. Patent No. 6,292,806B1 discloses a system and method which includes features for accessing and managing a database of aircraft technical information to support aircraft maintenance and repair assistance.
3. U.S. Patent No. 6,278,965B1 discloses a real time data management system using data generated at different rates to support aircraft surface operations.
4. U.S. Patent No. 6,275,812B1 discloses a system and method for training and transition of persons using skill templates and weightings.
5. U.S. Patent No. 6,275,767B1 discloses a method for implementing an air traffic service unit which links aircraft equipments, communication systems, and an operating system. Hooks method is used to filter operating system calls from airline operational communications.
6. U.S. Patent No. 6,263,315B1 discloses a method and system for supporting decisions to accept or deny requests for resource capacity by using control logic that accesses multi-dimensional lookup tables of price values for each resource.
7. U.S. Patent No. 6,240,362B1 discloses a method of scheduling a vehicle in real-time to transport freight and passengers through use of a host computer and freight/passenger terminals connected to a network, where arrival and departure times to each destination are estimated and updated as the vehicle travels.
8. U.S. Patent No. 6,161,097 discloses a system and method which receives data from multiple sources that is generated at different rates to provide real-time scheduling of the movement of plural surface vehicles.
9. U.S. Patent No. 6,078,912 discloses a computer system and method for determining and managing support resources of an object resource.
10. U.S. Patent No. 6,064,981 discloses a system and method for accepting or negotiating freight forwarder or carrier rates by way of the Internet.
11. U.S. Patent No. 5,794,224 discloses a network probabilistic resource allocation system and method which includes a low capacity computational module, and a self-organizing associative network, where nodes represent elementary resources, terminal end nodes represent goals, and weighted links represent the order of resource association in different allocation episodes.
12. U.S. Patent No. 5,450,317 discloses an automated system and method for recommending optimal order quantities and timing, choice of vendor locations and storage locations, and transportation modes for individual items and product families.
13. U.S. Patent No. 5,265,006 discloses a method and system for distributing planned and random orders with source and destination points in a predetermined geographic territory.



CA107US
Information Disclosure Statement Memorandum
Page 3

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APR 01 2002

Technology Center 2100

14. U.S. Patent No. 4,797,839 discloses a system and method which processes probability data to provide optimum allocation of resources among a series of demands.

Printed Publications

1. Knut Haase, Jorg Latteier, And Andreas Schirmer, "Course Planning at Lufthansa Technical Training: Constructing More Profitable Schedules", INTERFACES 29:5 (September-October 1999), pages 95-109. The publication describes the problem of determining which courses to offer maintenance staff, and when to offer such courses to maximize profit. A scheduling system having at its core a mathematical model employing a serial scheduling scheme also is described.

2. Xiangtong Qi, Jonathan F. Bard, Gang Yu, "Class Scheduling For Pilot Training", dated June 2001, and submitted to Board Of Editors & Referees on July 2, 2001 for consideration as a publication. The publication teaches that the pilot scheduling problem is of NP-hard complexity. Generally known branch and bound and rolling horizon approaches are described for use in a proof-of-concept formulation to address scheduling at a day level only. One of the inventors of the present invention, Xiangtong Qi, contributed a methodology for developing an integer programming model to solve the problem. However, the integer programming model is too complex for commercial solution.

3. Jonathan F. Bard, Liu Huang, Patrick Jaillet, and Moshe Dror, "Decomposition approach to the Inventory Routing Problem with Satellite Facilities", Transportation Science 32 (1998), pages 189-203. The publication discloses a method including a rolling horizon approach for solving an inventory routing problem, where a central supplier restocks customers intermittently.

Respectfully Submitted,

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Substitute for form 1449B/PTO		Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)		Application Number	10/045522
		Filing Date	1/11/02
		First Named Inventor	Benjamin G. Thengva 11
		Group Art Unit	2121
		Examiner Name	NOT Assigned
Sheet 2 of 2	Attorney Docket Number	CAT07US	

OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
	14	KNUT HAASE, JORG LATTEIER, & ANDREAS SCHIRMER, "Course Planning at Lufthansa Technical Training : Constructing More Profitable Schedules", INTERFACES 29:5 (September-October 1999), pages 95-109.	
	15	XIANGTONG QI, JONATHAN F. BARD, GANG YU, "Class Scheduling For Pilot Training", dated June 2001, and submitted to Board of Editors & Referees on July 2, 2001 for consideration as a publication.	
	16	JONATHAN F. BARD, LIU HUANG, PATRICK JAILLET, and MOSHE DROR, "Decomposition Approach to the Inventory Routing Problem with Satellite Facilities", Transportation Science 32 (1998), pages 189-203.	

Examiner Signature	Date Considered
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*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Applicant's unique citation designation number (optional). ² Applicant is to place a check mark here if English language Translation is attached.

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